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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/380,630	09/20/99	HAYAKAWA	AS 2651-0028-2X

IM52/0216
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EXAMINER

PADGETT, M

ART UNIT	PAPER NUMBER
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1762

DATE MAILED:

02/16/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/380,630

Applicant(s)

Haya Kawa et al

Examiner

M.L. Padgett

Group Art Unit

1762

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 4/11/00
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-15 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-12 is/are rejected.
- ☒ Claim(s) 13-15 (improper multiple dependent) is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3
- ☒ Notice of Reference(s) Cited, PTO-892
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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1. Claimed 13-15 are objected to under 37 CFR 1.75© as being in improper form because a multiple dependent claim cannot depend from any other multiply dependent claim. See MPEP § 608.01(n). Accordingly, the claim these claims have not been further treated on the merits.

2. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5 in the preamble "the material to be marked" and "the marking material" lack proper antecedent basis. Also "consist" is the wrong part of speech, ie. grammatically incorrect.

In claims 1, 5 and 8, how does one use "a transparent body or a laser transmissive body" as a marking material"? Logic says, that should be the material to be marked, but the word order does not. Also, "transparent" to what? This is a relative term lacking clear metes and bounds, unless appropriately define by the specification or claims.

In claim 1, lines 4 and 5 "the surface of..." lacks proper antecedent basis, as it does in lines 6 and 7 of claim 5, and lines 5 and 6 of claim 8. In claims 5 and 8, lines 4 "the process" lacks proper antecedent basis, as do (in claim 5) "the gas" (line 16), "the evaporation" (line 17); "the reaction product" (lines 18-19) and "the desire of portion" (line 20, in consistent with line 13); and (claim 8) "the transmittivity or reflectivity" in line 14, while "laser beam irradiation" should show antecedence back to lines 8-9 in order to be properly related to previous steps.

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In claim 4, how is something that's already transparent made transparent; or alternately, if the preambles were erroneous, how can something transparent be marked with something else transparent?

In claim 6 "one of either oxygen or nitrogen or both" needs a little punctuation.

In claim 9, applicant's combination of alternatives is somewhat jumbled. For instance "a compound containing... one of ... metal compound"??? Would --is a metal or a compound, alloy or intermetallic thereof-- provide supported the intended meaning?

In claim 10 "the thin film" lacks, any antecedent basis, and the claim of double ranges in lines 3-4 is improper, as it is unclear which limits the claim. Also, see claim 12 for double ranges, noting that "low" is a relative term lacking clear metes and bounds unless such is provided in the claims, the specification, or by relevant definition in prior art.

3. While applicant's 1H49 is made of record, the examiner notes that JP 06-061193 equivalent to P.N. 5,298,463 to Sandhu et al cited by applicant's is NOT the same as the document to FUJI DENKI KK, JP 60-061193 (no family), which is discussed as relevant to the claims. The Sandhu reference is not.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

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has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8-9 and 11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cook.

In Cook, note that both irradiating through the substrate (material to be marked) as in Fig. 5, described in col. 6, lines 29-52, and irradiating through the support for the transfer (marking) material as in Fig. 2, are taught to be useful for patterning, such as for metal circuits or repair of photo masks (on glass substrates). Tests show use of a steel alloy foil for transfer and a gap of approximately $0.025 \text{ mm} = 25 \mu\text{m}$. Col. 5, lists other useful metals and alloys, as well as uses. The properties of the transferred material are inherently modified during the process.

6. Claims 1-3, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook as applied above, in view of Tatah (462).

Cook does not teach a second use of laser irradiation, nor the specific steels or any thicknesses of deposit. As the thicknesses of the foils for this process are generally quite thin, so are the films produced. Additionally, when irradiating through the substrate, the resultant deposit

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limits film thickness as it progressively blocks the light, hence the thickness as claimed would have been obvious or expected by one of ordinary skill from the limits induced by source material or attenuation. As Cook's process is applicable generally to metals, and particularly mentions steel alloys, use of any common steel alloys would have been obvious, depending on properties desired in the final end product, because all would have been expected to be effectively treated.

Tatah (462) also produces laser ablation film patterns, including discussing repair processes (Fig. 5-6 and col. 6, lines 7-35), but the Tatah (462) configuration is analogous to Cook's fig. 2. After deposition, Tatah teaches enhanced binding by repeated reflection of laser light to heat the substrate deposited on (abstract, figure 3; col. 4, lines 10-56), hence it would have been obvious to use the post-treatment process of Tatah (462) in Cook, for the benefits taught and because equivalence of deposition processes is taught in Cook. Lower power would have been expected, as vaporization is not desired in the post-treatment.

7. Tatah (336) has bonding teachings equivalent to the (462) reference, and Landsman has multiple laser treatment, transfer and post-treatment that are equivalently applicable.

8. Claims 5-6 and 9-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hase et al..

In Hase et al, see the abstract; fig. 1; col. 2, line 23-68; col. 3, line 3-16; and Ex. 1.

9. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook as discussed above, and in view of Landsman optionally considering Braudy.

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Cook as noted teaches Fig. 2 and 5 configurations, where as Landsman and Braudy only use fig. 2 types. In Landsman, see abstract, figures and col. 2-4. In Brandy, see abstract, figures 1-3; col. 2, line 1-52; col. 3 and table. Landsman shows that multiple lasers (transfer, the treating) are appropriate for dye and pigment type materials, while Braudy supplies a many possible pigments, hence it would have been obvious to one of ordinary skill in the art that such dyes and pigments would have been both useful and effectively treated in processes of Cook due to the overlapping mechanisms employed.

10. Other art of interest, includes Drew et al, Frausto et al and Ronn et al will configurations and materials of interest.

11. Any inquiry concerning this communication should be directed to M. L. Padgett at telephone number (703)308-2336 on M-F from about 8 am to 4:30 pm, and FAX # (703) 305-5408 (official) and 305-6078 (unofficial)..

Padgett/af

February 13, 2001

February 15, 2001

A handwritten signature in cursive script, reading "Marianne Padgett". The signature is written in black ink and is positioned above the printed name and title.

**MARIANNE PADGETT
PRIMARY EXAMINER
GROUP 1100**